

**ABSTRACT**

The present invention is a novel process for methanol production in a liquid phase reactor from a synthesis gas comprising of hydrogen, carbon dioxide and carbon monoxide. 5 The liquid phase reactor contains a solid catalyst suspended in methanol. In this innovation, methanol acts both as a product and as a suspension medium for the catalyst. The new innovation exploits the condensing conditions for 10 methanol production. By operating at condensing conditions, the methanol partial pressure at equilibrium is higher than the boiling pressure of methanol at the given temperature. Hence the produced methanol of the equilibrium composition condenses creating the potential of more gas to be converted. 15 Since equilibrium is not a limiting factor, high conversions can be obtained.